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Recent and planned changes in production capacity for bauxite, alumina and aluminium

Note by the UNCTAD secretariat

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A. Introduction

1. From 1995 to 1997, the UNCTAD secretariat published notes on "Recent and planned changes in production capacity for bauxite, alumina and aluminium" (UNCTAD/COM/RDS/1 and 4 and UNCTAD/ITCD/COM/13 respectively). The notes were intended to provide a continuation of a similar service formerly provided by the secretariat of the International Bauxite Association (IBA), which ceased its activities at the end of 1994. The notes were distributed to the member Governments of UNCTAD, as well as to about 100 companies, institutions and individuals interested in the bauxite/alumina/aluminium industry. Readers were invited to comment on the usefulness and accuracy of the information. The replies received were all positive and it was decided to continue the service on a trial basis. However, recent reductions in the staff working on commodity issues in the UNCTAD secretariat have now made it impossible to devote resources to this activity. Accordingly, this note is the last of its kind to be published.

2. The present note uses the same format as the ones previously published. The bulk of the note consists of three tables showing capacity developments for bauxite, alumina and primary aluminium respectively during the period 1998 to 2003. The tables are based on information on production capacities and investment plans available to the UNCTAD secretariat, mainly from trade journals. A commentary on the tables is provided in section C below in summary form.

B. Definitions

3. With the exception of data for bauxite mines, capacity refers to nominal or "nameplate" capacity. While alumina refineries and primary aluminium smelters may from time to time exceed their nominal production capacities, sometimes for many consecutive years, an attempt to estimate "actual" or "real" capacities is likely to lead to inconsistencies and create confusion. In the case of bauxite mines, however, nominal capacity figures may not be very relevant, given the ease with which output can often be changed. Accordingly, bauxite mine production capacities refer to "real" capacity, as concluded from historical production figures. Capacities are expressed in thousand metric tons per year at the end of the year.

4. For bauxite mines, production capacity data refer to the gross weight (that is, not the aluminium or alumina content) of saleable products. It should be noted that the data may in some cases refer to dry weight (not including the moisture content of the material) rather than total weight, since it has not been possible to standardize the data. Data on a few mines producing non-bauxite raw materials used in alumina refineries have been included, although the capacity data are shown within parentheses and are not included in the totals. Production capacity data for alumina refineries refer to gross weight (not aluminium content) of saleable products. For aluminium, the data refer to primary aluminium in whatever form it is commercialized. Information on some production facilities which have closed as a result of war or civil disturbance has been included. Where it is unlikely that the production facility in question could be re-opened without a major reconstruction effort, its capacity is shown within parentheses and is not included in the totals.

5. Future additions to capacity have been included where there is a reasonably high probability of the investment taking place, for instance, because construction has started, financing has been secured or government approvals have been obtained. Clearly, information on projects which are not

planned to enter production until late in the period is less certain. For the sake of completeness, information has also been provided on some projects which are unlikely to enter into production during the period, in which case their capacity is shown as zero.

C. Summary of recent and expected developments in production capacity

6. The following table summarizes expected capacity developments from 1998 to 2003.

World production capacity for bauxite, alumina and aluminium 1998-2003 (thousand metric tons per year)

Product	Capacity in 1998	Changes		
		1999	2000	2001-2003
Bauxite	132,134	1,200	11,500	5,900
Alumina	52,466	800	2,940	3,582
Primary aluminium	24,437	395	555	1,854

1. Bauxite

7. World bauxite capacity is estimated to have increased by 1.2 million tons in 1999. The only capacity expansions took place in Latin America, where the Lelydorp mine in Surinam increased capacity by 1 million tons, and capacity at Bauxilum in Venezuela grew by 200,000 tons per year.

8. In the year 2000, production capacity is expected to increase by 11.5 million tons. Most of the increase is accounted for by the Huntly mine in Australia, where capacity is planned to rise by 6.1 million tons, replacing capacity at the Jarrahdale mine, which was closed at the end of 1998. Also in Australia, the Ely mine with a capacity of 2.5 million tons will open. Expansions will also take place at the Boke/Sangaredi mine in Guinea and at the MRN mine at Trombetas in Brazil.

9. Over the period from 2001 until the end of 2003, world bauxite production capacity is expected to increase by 5.9 million tons. India accounts for about half the expansion with capacity at the Panchpatmali mine expected to increase by 2.4 million tons. Other new mines are at the planning stage in India, particularly in the state of Orissa, where several integrated bauxite/alumina/aluminium operations are being planned, but it is uncertain if any of them will enter production during the period. Expansions are also expected at Weipa in Australia and at Bauxilum in Venezuela. It is also likely that there will be some expansion of bauxite production capacity in China, although no details are known.

2. Alumina

10. World alumina refining capacity is estimated to have increased by 800,000 tons in 1999, or by 1.5 per cent. The expansion of the Wagerup refinery in Australia accounts for more than half of this, or 500,000 tons, with the rest being made up by a smaller extension at Alunorte in Brazil.

11. In 2000, production capacity for alumina is expected to increase by 2.9 million tons. Again, Australia accounts for most of the increase, with a large expansion at Worsley and a smaller one at the Gove refinery. A relatively large expansion is expected to take place at the Damanjodi refinery in India, several smaller expansions are planned in China and a small expansion will take place in Italy.

12. During the period 2001-2003, alumina capacity is expected to increase by almost 3.6 million tons. One new alumina refinery is expected to enter into production in India. The largest expansions of existing capacity, 1 million tons and 820,000 tons respectively, are planned at Bauxilum in Venezuela and at Alunorte in Brazil. Smaller capacity increases will take place in Australia, China, Guinea, India, and Spain.

3. Aluminium

13. In late 1999, a little more than 900,000 tons of primary aluminium smelter capacity, representing 3.7 per cent of world capacity, was temporarily closed due to the market situation. While some of the capacity previously taken out of production was brought back into operation in 1998 and 1999, new cutbacks were introduced at a couple of smelters and market conditions have kept a large proportion of the smelters concerned from re-opening. Consequently, the net addition to production from this source was only about 100,000 tons during the last two years. Most of the continued cutbacks, or about 70 per cent, concerned smelters in the United States. Since information about the status of cutbacks is not available in some cases, the figures are uncertain. Moreover, several smelters, mainly in the other republics of the former USSR and in the countries formerly constituting Yugoslavia, operated at reduced capacity or were shut down due to war, civil unrest or technical problems. Total capacity was about 25.2 million tons at the end of 1999, and it is estimated that total production in the year will be about 22.7 million tons, or about 3.5 per cent more than in 1998.

14. World production capacity is estimated to have increased by 395,000 tons in 1999, or by 1.6 per cent. The Isle Maligne smelter in Canada was closed down, as was Alcoa's Suralco smelter in Surinam. The largest expansion took place in the United Arab Emirates, where capacity at the Dubai aluminium smelter was increased by 146,000 tons. Smaller increases in capacity were undertaken in Argentina, Canada, China, India, the Russian Federation and the United States.

15. In the year 2000, aluminium production capacity is expected to increase by 555,000 tons. The only new smelter is the Alma smelter in Canada, which will open in the second haldf of the year, while the Belgaum smelter in India is planned to close. Minor capacity expansions are expected in Canada, China, India, the Russian Federation and the United States.

16. During the years 2001 to 2003, production capacity is expected to increase by almost 1.9 million tons. Of this, about 740,000 tons would be added through expansions of existing smelters in Brazil, China, India, the Russian Federation, Spain and Slovakia, with the largest expansions taking place in China and the Russian Federation. Five new smelter projects with a combined capacity of 1,130,000 tons are reasonably certain to be implemented: in Australia (400,000 tons), China (two smelters with a combined capacity of 355,000 tons), India (125,000 tons) and Mozambique (250,000 tons). One smelter, at Steg in Switzerland (18,000 tons), which was going to close in 1999, is likely to remain open until 2001.

D. Market outlook

17. Aluminium stocks are believed to have been roughly unchanged in both 1998 and 1999. While producers' inventories of unwrought aluminium as reported by the International Primary Aluminum Institute decreased by about 150,000 tons during the first nine months of 1999, this decrease was offset by an increase of 160,000 tons in London Metal Exchange (LME) stocks during the same period. It should be noted, however, that it is estimated that significant amounts of inventories are unreported and that in 1998, total stocks may have increased as a result. At the end of 1999, it appears that production and consumption rates are more or less in balance. Prices decreased in 1998, with the average monthly price falling from US$ 1,485.80 per ton in January to US$ 1,249.10 in December. Expectations of falling demand due to the Asian financial crisis were among the main reasons for the price fall. These expectations turned out to be somewhat exaggerated, since consumption increased by 2 to 2.5 per cent during the year. In 1999, a return of business confidence and relatively robust demand growth led to an increase in prices, particularly during the second half of the year. In December, spot prices on the LME were over US$ 1,500 per ton. The potential for rapid re-opening of the closed-down capacity may preclude any major increases in prices in the year 2000, in spite of positive economic growth forecasts and stocks being close to the level desired for operations. For the longer period stretching from 2000 to 2003, however, assuming that primary aluminium consumption increases at a rate close to the historical average, that is, an annual rate of between 2.5 and 3.5 per cent, anticipated capacity increases of 2 million tons may not be sufficient to meet demand. Accordingly, temporarily closed down capacity is likely to be brought back into operation and, even assuming that this happens, a price peak may occur in 2001 or 2002, depending on the exact timing of capacity additions.

18. During 1999, two major mergers were announced in the aluminum industry. In August, Alcan, Algroup (formerly Alusuisse) and Pechiney announced a planned merger of the three companies. Shortly thereafter, Alcoa announced plans to take over Reynolds. Subsequently, in March 2000, plans for the first merger was cancelled. The outcome of the merger plans between Alcoa and Reynolds depends on anti-trust rulings by the authorities of the United States and the European Union. The rulings were expected in mid-May. The trend towards increased concentration illustrated by the merger attempts could have implications for market behaviour in the future. In particular, the tendency for prices to fluctuate by large amounts, which in the view of many industry observers is partly due to the reluctance of the industry to cut output sufficiently or rapidly enough in times of low prices, may be significantly reduced if industry concentration were to increase.

19. Prices for alumina declined slightly in 1998, but began a modest recovery in the first half of 1999 as the projected surplus of production over demand shrank. Following the explosion at the Gramercy refinery in the United States on 5 July, which led to a loss of 2 per cent of world alumina production capacity, prices increased dramatically. On the spot market, prices nearly doubled from about US$ 150 per ton to US$ 280, while price clauses in long-term contracts increased from about 12 per cent of the aluminum prices to 15 per cent. Planned capacity expansions in the year 2000 should be sufficient to meet additional demand, but the possibility of alumina availability becoming a constraint on aluminium production can not be totally excluded, since the Gramercy refinery is not likely to be back in operation until shortly before the end of the year. Over the longer term, it is likely that more capacity than has been identified in the table in the annex will need to be added and that previously cancelled or delayed projects will be resurrected.

20. Bauxite capacity and production are expected to grow at rates sufficient to meet the requirements of alumina refineries, in particular since major additions to capacity are expected to take place in the year 2000 as well as in later years.

Table 1. Bauxite mine capacity 1998-2003
(thousand metric tons per year)

Country/company	Location	Bauxite type[a]	Capacity 1998	1999	2000	2003	Comments
Developed countries							
North America							
United States of America							
C-E Minerals	Eufaula, Alabama	NMG	100	100	100	100	
	Andersonville, Georgia	NMG	20	20	20	20	
Cytec Industries	Andersonville, Georgia	NMG	150	150	150	150	
Harrison-Walker Refractories	Eufaula, Alabama	NMG	100	100	100	100	
Total United States, North America		**NMG**	**370**	**370**	**370**	**370**	
Europe							
Western Europe							
France							
Garrot Chaillac	Bedarieux, Hérault	NMG	200	200	200	200	
Greece							
Bauxite Delphon	Delphi	MG	600	600	600	600	
Bauxite Hell. Distomon	Distomon	MG	310	310	310	310	
Bauxite Parnasse	Delphi	MG	800	800	800	800	
		NMG	400	400	400	400	

Country/company	Location	Bauxite type[a]	Capacity 1998	1999	2000	2003	Comments
Eleusis Bauxite	Eleusis	MG	120	120	120	120	
Total Greece		**MG**	**1830**	**1830**	**1830**	**1830**	
		NMG	**400**	**400**	**400**	**400**	
Italy							
Sarda Bauxiti	Olovedo, Sardinia	MG	350	350	350	350	
Total Western Europe		**MG**	**2180**	**2180**	**2180**	**2180**	
		NMG	**600**	**600**	**600**	**600**	
Eastern Europe							
Hungary							
Bakonyi Bauxitbanya Kft.	Bakonyi	MG	1500	1500	1500	1500	Producing at reduced rate (500-1000 ktpy) due to closures of customer refineries (Metal Bulletin, 3 March 1997, p. 5)
Romania							
State	Rosia	MG	500	500	500	500	
Russian Federation							
	Severo-Uralsk	MG	3200	3200	3200	3200	
	Yuzhno-Uralsk	MG	500	500	500	500	
	Severo-Onezhsky	MG	1000	1000	1000	1000	
	Kola Peninsula, nepheline	MG	(1500)	(1500)	(1500)	(1500)	Bauxite equival.=825,000 tons
	Caucasus, alunite	MG	(4200)	(4200)	(4200)	(4200)	Bauxite equival.=2,310,000 tons
Total Russian Federation		**MG**	**4700**	**4700**	**4700**	**4700**	
Total Eastern Europe		**MG**	**6700**	**6700**	**6700**	**6700**	

Country/company	Location	Bauxite type[a]	Capacity 1998	1999	2000	2003	Comments
Australia							
Alcan	Ely, Queensland	MG	0	0	2500	2500	
Alcoa World Alumina (Alcoa 60 %,	Del Park	MG	6000	6000	6000	6000	
Western Mining Corporation 40 %)	Huntly	MG	11900	11900	18000	18000	
	Willowdale	MG	6100	6100	6100	6100	
Comalco	Weipa	MG	11050	11050	11050	13550	
		NMG	250	250	250	250	
Nabalco Pty. Ltd.	Gove	MG	6750	6750	6750	6750	
		NMG	250	250	250	250	
Worsley Alumina Pty. Ltd.	Mt. Saddleback	MG	7000	7000	7000	7000	
Total Australia		**MG**	**48800**	**48800**	**57400**	**59900**	
		NMG	**500**	**500**	**500**	**500**	
Total developed countries		**MG**	**57680**	**57680**	**66280**	**68780**	
		NMG	**1470**	**1470**	**1470**	**1470**	
Developing countries							
America							
Brazil							
Alcan	Ouro Preto	MG	485	485	485	485	
Alcoa	Poços de Caldas	MG	750	750	750	750	
CBA	Poços de Caldas	MG	600	600	600	600	
	Cataguazes	MG	500	500	500	500	
Cia. Brasileira de Bauxita	Paragomina, Pará	NMG	20	20	20	20	
CVRD/Paraibuna	North Pará	NMG	100	100	100	100	

Country/company	Location	Bauxite type[a]	Capacity 1998	1999	2000	2003	Comments
Finapa	Bahia	NMG	140	140	140	140	
Mineração Curimbaba Ltda.	Poços de Caldas	NMG	244	244	244	244	
MRN	Trombetas	MG	9600	9600	10000	10000	May be expanded to 13.5 Mtpy (Metal Bulletin, 12 July 1999, p. 3)
MSL Minerais SA	Caracuru, Pará	NMG	200	200	200	200	
Total Brazil		**MG**	**11935**	**11935**	**12335**	**12335**	
		NMG	**704**	**704**	**704**	**704**	
Guyana							
Bermine	Berbice/Mackenzie	MG	150	150	150	150	
		NMG	150	150	150	150	
Linmine/Alcan	Linden	NMG	200	200	200	200	
Reynolds/Bidco	Aroaima	MG	1500	1500	1500	1500	
Total Guyana		**MG**	**1650**	**1650**	**1650**	**1650**	
		NMG	**350**	**350**	**350**	**350**	
Jamaica							
Alpart	Nain	MG	3600	3600	3600	3600	
Jamalcan	Schwallenburg	MG	1300	1300	1300	1300	
	Kirkvine	MG	1300	1300	1300	1300	
Jamalco	Mocho Mountain	MG	2000	2000	2000	2000	
Kaiser Jamaica Bauxite Co.	St. Ann/Discovery Bay	MG	4000	4000	4000	4000	
Total Jamaica		**MG**	**12200**	**12200**	**12200**	**12200**	
Suriname							
Gencor/Alcoa	Lelydorp	MG	1000	2000	2000	2000	
Alcoa	Coirmotibo	MG	2000	2000	2000	2000	
Total Suriname		**MG**	**3000**	**4000**	**4000**	**4000**	

Country/company	Location	Bauxite type[a]	Capacity 1998	1999	2000	2003	Comments
Venezuela							
Bauxilum	Los Pijiguaos	MG	5800	6000	6000	7000	Privatization planned for 2000 (Metal Bulletin, 23 September 1999, p. 11)
Total America		**MG**	**34585**	**35785**	**36185**	**37185**	
		NMG	**1054**	**1054**	**1054**	**1054**	
Africa							
Ghana							
Ghana Bauxite	Awaso	MG	400	400	400	400	
Guinea							
CBG	Boke/Sanagaredi	MG	12000	12000	13500	13500	
		NMG	150	150	150	150	
Friguia	Fria-Kimbo	MG	2150	2150	2150	2150	To be privatized (Metal Bulletin, 22 February 1999, p. 14)
OBK	Kindia	MG	3000	3000	3000	3000	
Total Guinea		**MG**	**17150**	**17150**	**18650**	**18650**	
		NMG	**150**	**150**	**150**	**150**	
Mozambique							
E.C. Meikle Plc.	Manica	NMG	10	10	10	10	
Sierra Leone							
Sierra Leone Ore & Metal Co.	Mokanji-Gondama	MG	1200	1200	1200	1200	Closed in January 1995 (Mining Journal, 30 May 1997, p. 427)
Total Africa		**MG**	**18750**	**18750**	**20250**	**20250**	
		NMG	**160**	**160**	**160**	**160**	

Country/company	Location	Bauxite type[a]	Capacity 1998	1999	2000	2003	Comments
Asia							
Azerbaijan							
Zaglik Alunite Mining Dir.	Zaglik, alunite	MG	(500)	(500)	(500)	(500)	Bauxite equivalent=170,000 tons
China							
National Nonferrous Metals Bureau and provincial governments	various	MG	5500	5500	6500	6500	
		NMG	750	750	750	750	
India							
Bharat Aluminium Co.	Mainper, Madhya Pradesh	MG	400	400	400	400	
	Bhuj	NMG	100	100	100	100	
Gimpex Minerals	Renukoot, Uttar Pradesh	MG	600	600	600	600	
Gujarat Mineral Development Corp.	Kutch/Saurashtra, Gujarat	NMG	500	500	500	500	
Hindustan Aluminium Co.	Lohardfaga, Bihar	MG	225	225	225	225	
Indian Aluminium Co.	Kolhapur, Maharashtra	MG	480	480	480	480	
	Belgaum, Karnataka	MG	400	400	400	400	
	Ranmchi, Bihar	MG	200	200	200	200	
Madras Aluminium Co.	Mettur, Tamil Nadu	NMG	100	100	100	100	
National Aluminium Co.	Panchpatmali	MG	2400	2400	2400	4800	Expansion project progressing (Metal Bulletin, 5 October 1999, p. 9)
Prabhudas	Jamnagar	NMG	30	30	30	30	
Total India		**MG**	**4705**	**4705**	**4705**	**7105**	
		NMG	**730**	**730**	**730**	**730**	

Country/company	Location	Bauxite type[a]	Capacity 1998	1999	2000	2003	Comments
Indonesia							
Aneka Tambang	Bintan	MG	0	0	0	0	Mine closed 1998, previous capacity 1300 ktpy (Mining Journal, 17 July 1998, p. 41)
Iran (Islamic Reublic of)							
State	Jajrum	MG	100	100	100	100	
Kazakhstan							
State	Turgay	MG	1300	1300	1300	1300	
	Krasnooktyabrsk	MG	1700	1700	1700	1700	
Total Kazakhstan		**MG**	**3000**	**3000**	**3000**	**3000**	
Malaysia							
Johore Mining and Stevedoring Co.	Bukit Pasat, Johore	MG	800	800	800	800	
		NMG	200	200	200	200	
Turkey							
Etibank	Seydisehir/Bolkardag	MG	400	400	400	400	
		NMG	200	200	200	200	
Total Asia		**MG**	**14505**	**14505**	**15505**	**17905**	
		NMG	**1880**	**1880**	**1880**	**1880**	

Country/company	Location	Bauxite type[a]	Capacity 1998	1999	2000	2003	Comments
Europe							
Bosnia and Herzegovina							
Energoinvest	Vlasenica	MG	1000	1000	1000	1000	
Croatia							
Pomgrad	Imotski	MG	50	50	50	50	
Yugoslavia							
Kombinat Aluminijum Titograd-Niksic	Niksic	MG	1000	1000	1000	1000	
Total Europe		**MG**	**2050**	**2050**	**2050**	**2050**	
Total developing countries		**MG**	**69890**	**71090**	**73990**	**77390**	
		NMG	**3094**	**3094**	**3094**	**3094**	
Total world		**MG**	**127570**	**128770**	**140270**	**146170**	
		NMG	**4564**	**4564**	**4564**	**4564**	

Sources: Trade journals

[a] MG=Metallurgical grade; NMG=Non-metallurgical grade.

Table 2. Alumina refinery capacity 1998-2003
(thousand metric tons per year)

Country/company	Location	Alumina type[a]	Capacity 1998	1999	2000	2003	Comments
Developed countries							
North America							
Canada							
Alcan	Vaudreuil, Québec	MG	1075	1075	1075	1075	
		NMG	100	100	100	100	
United States of America							
Alcoa	Point Comfort, Texas	MG	1450	1450	1450	1450	
		NMG	340	340	340	340	
	St. Croix, U.S. Virgin Islands	MG	600	600	600	600	
Kaiser	Gramercy, Lousiana	MG	1000	1000	1000	1000	Closed down due to explosion in July 1999, to be back in operation at end 2000 (Metal Bulletin, 26 July 1999, p. 4)
		NMG	200	200	200	200	
Ormet	Burnside, Louisiana	MG	600	600	600	600	
Reynolds	Corpus Christi, Texas	MG	1600	1600	1600	1600	
		NMG	200	200	200	200	
Total United States of America		**MG**	**5250**	**5250**	**5250**	**5250**	
		NMG	**740**	**740**	**740**	**740**	
Total North America		**MG**	**6325**	**6325**	**6325**	**6325**	
		NMG	**840**	**840**	**840**	**840**	
Europe							
Western Europe							
France							
Pechiney	Gardanne	MG	410	410	410	410	
		NMG	300	300	300	300	

Country/company	Location	Alumina type[a]	Capacity 1998	1999	2000	2003	Comments
Germany							
Aluminium-Oxid Stade	Stade	MG	670	670	670	670	
Elektrochemisches Kombinat	Lauta	NMG	60	60	60	60	
Lonza-Werke	Bergheim	MG	100	100	100	100	
		NMG	250	250	250	250	
Total Germany		**MG**	**770**	**770**	**770**	**770**	
		NMG	**310**	**310**	**310**	**310**	
Greece							
Aluminium de Grèce	Distomon	MG	640	640	640	640	
Ireland							
Aughinish Alumina Ltd.	Aughinish	MG	1100	1100	1100	1100	Sold by Alcan to Glencore (Metal Bulletin, 25 January 1999, p. 7)
Italy							
Eurallumina Spa.	Porto Vesme	MG	920	920	970	970	(Metal Bulletin, 11 February 1999, p. 4)
		NMG	30	30	30	30	
Spain							
Alcoa	San Ciprian	MG	1000	1000	1000	1100	
United Kingdom							
Alcan	Burntisland, Scotland	NMG	120	120	120	120	
Total Western Europe		**MG**	**4840**	**4840**	**4890**	**4990**	
		NMG	**760**	**760**	**760**	**760**	

Country/company	Location	Alumina type[a]	Capacity 1998	1999	2000	2003	Comments
Eastern Europe							
Hungary							
Altus-GPS	Motim	NMG	75	75	75	75	
Magyar Aluminium	Ajka	MG	300	300	300	300	Operating at a rate of 210 ktpy in 1998 (Metal Bulletin, 26 October 1998, p. 11)
	Almásfüzitõ	MG	350	350	350	350	Closed in November 1994, re-opened in December 1995, privatized in late 1996, closed down in early 1997, uncertain if it will re-open (Metal Bulletin, 24 March 1997, p. 5)
Total Hungary		**MG**	**650**	**650**	**650**	**650**	
		NMG	**75**	**75**	**75**	**75**	
Romania							
Balli Metal	Tulcea	MG	400	400	400	600	
State	Crisana	MG	250	250	250	250	
Total Romania		**MG**	**650**	**650**	**650**	**650**	
Russian Federation							
Achinsk Alumina	Achinsk	MG	900	900	900	900	
Pikalevo Alumina	Pikalevo	MG	260	260	260	260	
Tikhvin Alumina	Boksitogorsk	MG	200	200	200	200	
Ural Aluminium Co.	Bogoslovsk	MG	950	950	950	950	
Ural Aluminium Co.	Kamensk	MG	500	500	500	500	
Volkhov Aluminium	Volkhov	MG	40	40	40	40	
Total Russian Federation		**MG**	**2850**	**2850**	**2850**	**2850**	
Slovakia							
ZSNP	Ziar-nad-Hronom	MG	65	65	65	65	
Ukraine							
Nikolaev Alumina	Nikolaev	MG	1000	1000	1000	1000	

Country/company	Location	Alumina type[a]	Capacity 1998	1999	2000	2003	Comments
Total Eastern Europe		**MG**	**5215**	**5215**	**5215**	**5215**	
		NMG	**75**	**75**	**75**	**75**	
Australia							
Alcoa World Alumina (Alcoa 60%, Western	Kwinana	MG	1900	1900	1900	1900	
		NMG	200	200	200	200	
Mining Corporation 40 %)	Pinjarra	MG	3100	3100	3100	3100	
	Wagerup	MG	1700	2200	2200	2200	Expansion to 3.3 Mtpy considered (Metal Bulletin, 14 October 1999, p. 6)
Australia Fused Material	Doral	NMG	20	20	20	30	
Nabalco Pty. Ltd.	Gove	MG	1750	1750	2000	2000	Capacity increase to be completed by 2001 (Metal Bulletin, 10 June 1999, p. 4)
Queensland Alumina Ltd.	Gladstone	MG	3300	3300	3300	3600	
Worsley Alumina Pty. Ltd.	Worsley	MG	1700	1700	3100	3100	
Comalco	Queensland	**MG**	0	0	0	0	Completion date of project uncertain (Metal Bulletin, 24 February 1998)
Total Australia		**MG**	**13450**	**13950**	**15600**	**15900**	
		NMG	**220**	**220**	**220**	**230**	
Japan							
Nippon Light Metal	Shimizu	MG	215	215	215	215	
		NMG	200	200	200	200	
Showa Light Metal	Yokohama	NMG	275	275	275	275	
Sumitomo Chemical	Kikumoto	NMG	220	220	220	220	
Total Japan		**MG**	**215**	**215**	**215**	**215**	
		NMG	**695**	**695**	**695**	**695**	
Total developed countries		**MG**	**30045**	**30545**	**32245**	**32645**	
		NMG	**2590**	**2590**	**2590**	**2600**	

Country/company	Location	Alumina type[a]	1998	1999	2000	2003	Comments
Developing countries							
America							
Brazil							
Alcan	Saramenha	MG	150	150	150	150	
Alcoa	Poços de Caldas	MG	180	180	180	180	
		NMG	170	170	170	170	
Alumar	São Luis	MG	1400	1400	1400	1400	
Alunorte	Belem	MG	1200	1500	1500	2320	Expansion to be completed in 2001 (Metal Bulletin, 12 July 1999, p. 3)
C B A	Mairinque	MG	440	440	440	440	
Total Brazil		**MG**	**3370**	**3670**	**3670**	**4490**	
		NMG	**170**	**170**	**170**	**170**	
Jamaica							
Alpart	Nain	MG	1450	1450	1450	1450	
Jamalcan	Ewarton	MG	560	560	560	560	
	Kirkvine	MG	548	548	548	548	
		NMG	15	15	15	15	
Jamalco	Woodside	MG	800	800	800	800	
Total Jamaica		**MG**	**3358**	**3358**	**3358**	**3358**	
		NMG	**15**	**15**	**15**	**15**	
Suriname							
Billiton/Alcoa	Paranam	MG	1530	1530	1530	1530	
		NMG	120	120	120	120	
Venezuela							
Bauxilum	Mantanzas	MG	2000	2000	2000	3000	Privatization planned for 2000 (Metal Bulletin, 23 September 1999, p. 11)
Total America		**MG**	**10258**	**10558**	**10558**	**12378**	

Country/company	Location	NMG Alumina type[a]	305 Capacity 1998	305 Capacity 1999	305 Capacity 2000	305 Capacity 2003	Comments
Africa							
Guinea							
Friguia	Fria	MG	640	640	640	720	Capacitzy to be expanded over four years (Metal Bulletin, 25 March 1999, p. 3), Reynolds to buy 100 per cent (Metal Bulletin, 29 July 1999, p. 4)
Asia							
Azerbaijan							
Gyandzha Alumina Association (formerly Kirovabad Aluminium)	Gyandzha	MG	400	400	400	400	Production came to a halt in 1997 due to financial and energy supply problems, production during the year was about 10,000 tons (Platt's Metals Week, 27 October 1997, p. 6)
China							
China Great Wall	Zhengzhou	MG	800	800	930	1000	(Platt's Metals Week, 11 January 1999, p. 14)
Aluminium Corp.	Zhongzhou	MG	200	200	200	600	
Nonferrous Metals	Guiyang, Guizhou	MG	400	400	500	500	(Metal Bulletin, 4 October 1999, p. 7)
Industry Bureau and	Heijin, Shanxi	MG	1200	1200	1200	1200	
provincial governments	Nanning, Shandong	MG	560	560	560	650	
China Aluminium Corp.	Pingguo, Guanxi Zhuang	MG	330	330	660	660	Capacity may eventually reach 1 Mtpy (Metal Bulletin, 19 August 1999, p. 5)
	About 150 producers	NMG	300	300	300	300	
Total China		**MG**	**3490**	**3490**	**4050**	**4610**	
		NMG	**300**	**300**	**300**	**300**	
India							
Bharat Aluminium Co.	Korba, Madhya Pradesh	MG	200	200	200	200	
Hindustan Aluminium Co.	Renukoot, Uttar Pradesh	MG	450	450	450	450	
Indian Aluminium Co.	Belgaum, Karnataka	MG	318	318	318	510	(Metal Bulletin, 23 September 1999, p. 6)
Indian Aluminium Co.	Muri, Bihar	MG	80	80	80	100	Further expansion to a total of 200 ktpy considered (Metal Bulletin, 23 September 1999, p. 6)
		NMG	40	40	40	40	

Country/company	Location	Alumina type[a]	Capacity 1998	1999	2000	2003	Comments
Madras Aluminium Co.	Mettur, Tamil Nadu	MG	60	60	60	60	
National Aluminium Co.	Damanjodi, Orissa	MG	900	900	1580	1580	Expansion to be completed in second hald of 2000 (Metal Bulletin, 26 July 1999, p.9)
Sterlite Industries Ltd.	Ib Valley, Orissa	MG	0	0	0	500	Integrated project, to be completed inlate 2001 (Metal Bulletin, 28 September 1999, p. 9)
Total India		**MG**	**2008**	**2008**	**2688**	**3400**	
		NMG	**40**	**40**	**40**	**40**	
Iran (Islamic Republic of)							
State	Jajrum	MG	50	50	50	50	
Kazakhstan							
Pavlodar Aluminium	Pavlodar	MG	1100	1100	1100	1100	
Turkey							
Etibank	Seydisehir	MG	200	200	200	200	
Total Asia		**MG**	**7248**	**7248**	**8488**	**9760**	
		NMG	**340**	**340**	**340**	**340**	
Europe							
Bosnia and Herzegovina							
Energoinvest	Zvornik/Birac	MG	600	600	600	600	
Slovenia							
UNIAL	Kidricevo	MG	110	110	110	110	
Yugoslavia							
Kombinat Aluminijum Titograd-Niksic	Podgorica	MG	280	280	280	280	Managed by Glencore (Platt's Metals Week, 28 December 1998, p. 12)
		NMG	50	50	50	50	
Total Europe		**MG**	**990**	**990**	**990**	**990**	

		NMG	50	50	50	50	
Country/company	**Location**	**Alumina type[a]**	**Capacity 1998**	**1999**	**2000**	**2003**	**Comments**
Total developing countries		**MG**	**19136**	**19436**	**20676**	**23848**	
		NMG	**695**	**695**	**695**	**695**	
Total world		**MG**	**49181**	**49981**	**52921**	**56493**	
		NMG	**3285**	**3285**	**3285**	**3295**	

Sources: Trade journals

[a] MG=Metallurgical grade; NMG=Non-metallurgical grade

Table 3. Primary aluminium smelter capacity 1998-2003
(thousand metric tons per year)

Country/company	Location	Start-up	Capacity				Comments
			1998	1999	2000	2003	
Developed countries							
North America							
Canada							
Alcan	Arvida, Québec	1926	235	235	235	235	
	Beauharnois, Québec	1943	49	49	49	49	
	Grande Baie, Québec	1980	186	186	196	196	Capacity to be increased by a total of 20-25 ktpy at Grande Baie and Laterrière (Metal Bulletin, 28 September 1999, p. 9)
	Isle Maligne, Québec	1943	76	0	0	0	To be closed December 1999 (Metal Bulletin, 27 September 1999, p. 6)
	Kitimat, British Columbia	1954	275	275	275	275	
	Shawinigan, Québec	1900	87	87	87	87	
	Laterriere, Québec	1990	204	204	219	219	Capacity to be increased by a total of 20-25 ktpy at Grande Baie and Laterrière (Metal Bulletin, 28 September 1999, p. 9)
	Alma, Québec	1999	0	0	375	375	To open in September 2000 (Metal Bulletin, 21 October 1999, p. 11)
Alumax	Deschambault, Québec	1992	215	225	225	225	
Aluminerie Alouette	Sept Iles, Québec	1992	229	229	229	229	
Aluminerie de Becancour	Becancour, Québec	1986	360	379	379	379	Capacity has been increased gradually (Metal Bulletin, 16 September 1999, p. 13)
Reynolds	Baie Comeau, Québec	1957	400	410	410	410	
Total Canada			**2316**	**2279**	**2679**	**2679**	
United States of America							
Alcan	Sebree, Kentucky	1973	180	180	180	180	60 ktpy shut down in 1994, no plans for restart (Metal Bulletin, 19 October 1998, p. 8), expansion by 60 ktpy possible (Platt's Metals Week, 9 November 1998, p. 13)
Alcoa	Alcoa, Tennessee	1914	210	210	210	210	53 ktpy shut down (Light Metal Age, February 1997, p. 8)
	Badin, North Carolina	1916	115	115	115	115	56 ktpy shut down (Light Metal Age, February 1997, p. 8)
	Frederick, Maryland	1970	174	174	174	174	30 ktpy cut back (Platt's Metals Week, 9 November 1998, p. 12)

Country/company	Location	Start-up	Capacity				Comments
			1998	1999	2000	2003	
	Massena, New York	1903	125	125	125	125	
	Rockdale, Texas	1952	315	315	315	315	143 ktpy shut down (Light Metal Age, February 1997, p. 8)
	Warrick, Indiana	1960	300	300	300	300	44 ktpy shut down, no plans for restart (Metal Bulletin, 4 August 1997, p. 14)
	Wenatchee, Washington	1952	220	220	220	220	114 ktpy shut down (Light Metal Age, February 1997, p. 8)
Alumax	Mt. Holly, South Carolina	1980	200	200	200	200	
(Intalco)	Ferndale, Washington	1966	280	280	280	280	
Glencore	Ravenswood, West Virgina	1957	168	168	168	168	
	Columbia Falls, Montana	1955	168	168	168	168	
Kaiser	Mead, Washington	1942	210	210	210	210	
	Tacoma, Washington	1942	74	74	74	74	20 ktpy shut down following strike in 1998 (Platt's Metals Week, 8 February 1999, p. 12)
Noranda	New Madrid, Missouri	1971	220	220	220	220	22 ktpy shut down (Light Metal Age, February 1997, p. 8)
Northwest Aluminium	The Dalles, Oregon	1958	83	83	83	83	5.4 ktpy shut down (Light Metal Age, February 1997, p. 8)
	Goldendale, Washington	1971	168	168	200	200	Capacity expansion expected to be completed in 2000 (Platt's Metals Week, 12 October 1998, p. 12)
Ohio River Associates	Hannibal, Ohio	1958	250	250	250	250	
Reynolds	Longview, Washington	1941	204	204	204	204	47 ktpy shut down, no plans for restart (Metal Bulletin, 26 February 1996)
	Massena, New York	1953	123	133	133	133	(Metal Bulletin, 17 May 1999, p. 6)
	Troutdale, Oregon	1942	121	121	121	121	
Southwire	Hawesville, Kentucky	1969	186	235	235	235	Expansion completed in 1999, Southwire planning to sell smelter (Metal Bulletin, 29 April 1999, p. 4)
Vanalco	Vancouver, Washington	1940	116	116	116	116	28.75 ktpy shut down (Light Metal Age, February 1997, p. 8)
Total United States of America			**4210**	**4269**	**4301**	**4301**	
Total North America			**6526**	**6548**	**6980**	**6980**	
Western Europe							
France							
Pechiney	Auzat	1910	44	44	44	44	Re-started in 1999 (Platt's Metals Week, 25 January 1999, p. 5)
	Dunkerque	1994	215	215	215	215	

Country/company	Location	Start-up	Capacity				Comments
			1998	1999	2000	2003	
	Lannemezan	1939	45	45	45	45	Previously closed capacity re-started in 1999 (Platt's Metals Week, 25 January 1999, p. 5)
	St. Jean de Maurienne	1986	125	125	125	125	
Total France			**429**	**429**	**429**	**429**	
Germany							
Aluminium Essen GmbH	Essen	1970	135	135	135	135	45 ktpy shut down (Light Metal Age, February 1997, p. 9)
Hamburger Aluminium	Hamburg	1973	125	125	125	125	4 ktpy shut down (Light Metal Age, February 1997, p. 9)
Hoogovens Aluminium	Voerde	1972	80	80	80	80	
Vereinigte	Norf (Rheinwerk)	1963	210	210	210	210	
Aluminiumwerke (VAW)	Stade (Elbwerk)	1973	70	70	70	70	
Total Germany			**620**	**620**	**620**	**620**	
Greece							
Aluminium de Grece	Distomon	1966	153	153	153	153	
Iceland							
Isal	Straumsvik	1969	166	166	166	166	
Columbia Ventures Corp.			60	60	60	60	Smelter started up in 1998, capacity expansion to 90 ktpy is anticipated (Metal Bulletin, 18 February 1999, p. 7)
Total Iceland			**226**	**226**	**226**	**226**	
Italy							
Alcoa	Fusina	1971	40	40	40	40	
	Porto Vesme	1972	135	135	135	135	
Total Italy			**175**	**175**	**175**	**175**	
Netherlands							
Aluminium Delfzijl	Delfzijl	1966	98	98	98	98	
Pechiney	Vlissingen	1971	175	175	175	175	
Total Netherlands			**273**	**273**	**273**	**273**	

Country/company	Location	Start-up	Capacity				Comments
			1998	1999	2000	2003	
Norway							
Hydro Aluminium	Årdal	1946	197	197	197	197	
	Høyanger	1915	71	71	71	71	
	Karmøy	1967	267	267	267	267	
	Sunndalsøra	1954	140	140	140	140	
Mosjøen Aluminium	Lista	1971	90	90	90	90	10 ktpy shut down (Light Metal Age, February 1997, p. 9)
	Mosjøen	1958	120	120	120	120	
Sør Norge Aluminium	Husnes	1965	110	110	110	110	
Total Norway			**995**	**995**	**995**	**995**	
Spain							
Alcoa	San Ciprian	1979	200	200	200	222	Upgrading project will increase capacity through raised efficiency (Metal Bulletin, 15 September 1997, p. 15)
	La Coruña	1961	79	79	79	79	
	Aviles	1959	83	83	83	83	
Total Spain			**362**	**362**	**362**	**384**	
Sweden							
Gränges Aluminium	Sundsvall	1943	100	100	100	100	
Switzerland							
Alusuisse	Steg	1962	18	18	18	0	Smelter was to be closed at end of 1999, extended to 2001 (Metal Bulletin, 4 March 1999, p.7)
United Kingdom							
Alcan	Kinlochleven	1907	11	11	11	11	
	Lochabar	1982	40	40	40	40	
	Lynemouth	1972	140	140	140	140	75.5 ktpy shut down since 1991, no plans for restart (Platt's Metals Week, 20 October 1997, p. 15)
	Invergordon		0	0	0	0	Closed since 1982, re-opening has been discussed.

Country/company	Location	Start-up	Capacity				Comments
			1998	1999	2000	2003	
Anglesey Aluminium	Holyhead	1971	128	128	128	128	
Total United Kingdom			**319**	**319**	**319**	**319**	
Total Western Europe			**3670**	**3670**	**3670**	**3674**	
Eastern Europe							
Hungary							
Magyar Aluminium	Inota	1950	34	34	34	34	
Poland							
Impex Metal	Konin	1965	50	50	50	50	
Romania							
Alro Slatina	Slatina	1964	170	170	170	170	To be privatized (Metal Bulletin, 1 July 1999, p. 4)
Russian Federation							
Kandalakshii Aluminium	Kandalaksha	1951	70	70	70	70	
Krasnoyarsk Aluminium	Krasnoyarsk	1964	810	830	830	830	(Metal Bulletin, 25 February 1999, p. 6)
Nadvoitsy Aluminium	Nadvoitsy	1954	70	70	70	70	
Sibir-Urals Aluminium	Bogoslovsk (Krasnoturinsk)	1945	150	150	150	150	
	Irkutsk (Shelekhovo)	1962	280	280	280	280	70 ktpy of capacity to be added in the future (Platt's Metals Week, 8 February 1999, p. 10)
	Kamensk	1939	100	100	100	100	40 ktpy shut down (Light Metal Age, February 1997, p. 9)
Trans-World	Bratsk	1966	840	900	900	900	Capacity is gradually increasing (Platt's Metals Week, 11 January, p. 13)
	Novokuznetsk	1943	275	275	275	275	
Alumin-Produkt	Sayanagorsk	1984	384	384	397	613	Capacity increased in October 1998, large expansion to be completed in 2003 (Metal Bulletin, 15 October 1998, p. 5, 4 October 1999, p. 5)
Volgograd Aluminium	Volgograd	1959	120	130	130	130	Capacity to increase to 149 ktpy eventually (Platt's Metal Week, 9 November 1998, p. 13)
Volkhov Aluminium	Volkhov	1932	20	20	20	20	

Country/company	Location	Start-up	Capacity				Comments
			1998	1999	2000	2003	
Total Russian Federation			**3119**	**3209**	**3224**	**3440**	
Slovakia							
Slovalco	Ziar-nad-Hronom	1953	110	110	110	145	Expansion planned for end of 2001 (Platt's Metals Week, 1 March 1999, p. 10)
Ukraine							
Dniepr Aluminium	Zaporozhye	1934	130	130	130	130	
Total Eastern Europe			**3613**	**3703**	**3728**	**3979**	
Australia							
Capral Aluminium	Kurri, Kurri, New South Wales	1969	150	150	150	150	Smelter may be sold; 50 ktpy expansion considered, but put on hold following failure to arrange long-term power supply (Metal Bulletin, 22 November 1999, p. 7)
Alcoa of Australia	Point Henry, Victoria	1983	180	180	180	180	
	Portland, Victoria	1986	345	345	345	345	28 ktpy shut down, expansion completed in 1997 (Mining Journal, 14 August 1998)
Boyne Smelters Ltd.	Gladstone, Queensland	1982	490	490	490	490	
Comalco	Bell Bay, Tasmania	1962	128	128	128	128	
Tomago Aluminium	Tomago, New South Wales	1983	440	440	440	440	Expansion by 60 ktpy in 1998 through upgrading of existing potlines; addition of 220 ktpy potline by 2002-2003 considered (Metal Bulletin, 7 January 1999, p. 9)
Aust-Pac Aluminium	Lithgow, New South Wales		0	0	0	400	To reach full production in 2003 or 2004 (Metal Bulletin, 14 January 1999, p. 3
Total Australia			**1733**	**1733**	**1733**	**2133**	
Japan							
Nippon Light Metal	Kanbara	1940	35	35	35	35	

Country/company	Location	Start-up	Capacity				Comments
			1998	1999	2000	2003	
New Zealand							
NZ Aluminium Smelters Ltd.	Tiwai Point	1971	313	313	313	313	
Total developed countries			**15890**	**16302**	**16459**	**17114**	
Developing countries							
America							
Argentina							
Aluar	Puerto Madryn	1975	186	260	260	260	Capacity expansion completed in November 1999 (Metal Bulletin, 18 November 1999, p. 5)
Brazil							
Albrás	Belem	1985	345	345	345	387	
Alcan	Aratú	1972	58	58	58	58	
	Saramenha	1945	51	51	51	51	
Alcoa	Poços de Caldas	1970	90	90	90	90	
Alumar	São Luis	1985	365	365	365	365	
CBA	Mairinque	1954	229	229	229	229	
Valesul	Santa Cruz	1982	100	100	100	100	Producing 92-94 ktpy (Metal Bulletin, 18 November 1999, p. 5)
Total Brazil			**1238**	**1238**	**1238**	**1280**	
Mexico							
Aluminio SA	Vera Cruz	1963	(71)	(71)	(71)	(71)	Closed indefinitely (Metal Bulletin, 7 September 1992)
Suriname							
Suralco	Paranam	1965	30	(30)	(30)	(30)	Closed indefinitely (Metal Bulletin, 25 March 1999, p. 5)
Venezuela							
Alcasa	Puerto Ordaz	1967	160	160	160	160	Two oldest potlines closed in 1998 for safety reasons (Metal Bulletin, 14 December 1998, p. 3); privatization to take place in 2000 (Metal Bulletin, 23 September 1999, p. 11)

Country/company	Location	Start-up	Capacity				Comments
			1998	1999	2000	2003	
Venalum	Puerto Ordaz	1978	430	430	430	430	Privatization to take place in 2000 (Metal Bulletin, 23 September 1999, p. 11)
Total Venezuela			**590**	**590**	**590**	**590**	
Total America			**2044**	**2088**	**2088**	**2130**	
Africa							
Cameroon							
Alucam	Edea	1957	88	88	88	88	
Egypt							
Egyptalum	Nag Hammadi	1975	230	230	230	230	
Ghana							
Volta Aluminium Co.	Tema	1967	200	200	200	200	80 ktpy shut down during 1999 because of power shortage (Platt's Metals Week, 21 December 1998, p. 8); back to output of 160 ktpy by end 1999 (Metal Bulletin, 25 October 1999, p. 5)
Mozambique							
Mozal	Maputo		0	0	0	250	Smelter to be commissioned in early 2001 (Mining Journal, 24 July 1998, p. 51)
Nigeria							
Aluminium Smelting Company of Nigeria (Alscon)	Ikot Abasi, Akwa Ibom		193	193	193	193	Operated at 20 per cent of capacity in early 1999, to be privatized (Metal Bulletin, 8 February 1999, p. 3); production suspended due to lack of funding (Metal Bulletin, 14 June 1999, p. 17); re-opening discussed (Metal Bulletin, 6 September 1999, p. 13)
South Africa							
Alusaf	Richards Bay, Bayside	1971	220	220	220	220	
	Richards Bay, Hillside	1995	466	466	466	466	
Total South Africa			**686**	**686**	**686**	**686**	

Country/company	Location	Start-up	Capacity				Comments
			1998	1999	2000	2003	
Total Africa			**1397**	**1397**	**1397**	**1647**	
Asia							
Azerbaijan							
SAZ	Sumgait	1955	60	60	60	60	
Bahrain							
Alba	Ras Zurrayed (Knuff)	1971	500	500	500	500	Expansion to 750 ktpy studied, may be completed by 2004 (Metal Bulletin, 23 September 1999, p. 6)
China							
Nonferrous Metals Industry Bureau and provincial governments	Baiyin, Gansu		55	55	55	105	50 ktpy to be added before the year 2000 (Light Metal Age, February 1997, p. 14)
	Baotou, Inner Mongolia		71	71	71	71	
	Changchun, Jilin		16	16	16	16	
	Changsa, Hunan		15	15	15	15	
	Fushun, Liaoning		110	110	110	110	Output reduced by 25 ktpy due to shortage of working capital (Metal Bulletin, 19 October 1998, p. 8), started up again in February 1999 (Platt's Metals Week, 8 February 1999, p. 10)
	Guiyang, Guizhou		240	240	240	240	
	Jiaozuo, Henan		33	53	53	100	Expansion to be completed in 2001 (Platt's Metals Week, 8 February 1999, p. 10)
	Hefei, Anhui		10	10	10	10	
	Kunming, Yunnan		60	120	120	120	Capacity expansion was to be completed by end of 1999 (Platt's Metals Week, 8 February 1999, p. 10)
	Pingguo, Guanxi Zhuang	1994	150	150	150	150	
	Qingdao, Shandong		35	35	35	35	
	Qinghai, Xining		200	200	200	200	Capacity was expanded in 1998 (Metal Bulletin, 28 September 1998, p. 9)
	Qingtongxia, Ningxia		114	114	250	250	(Metal Bulletin, 8 November 1999, p. 6)
	Sanmenxia, Henan		82	82	82	82	
	Taiyuan, Shanxi		15	15	15	15	

Country/company	Location	Start-up	Capacity				Comments
			1998	1999	2000	2003	
	Wuhan, Hupei		13	13	13	13	
	Zhengzhou, Henan		135	135	135	255	120 ktpy to be added (Light Metal Age, February 1997, p. 14)
	Shanxi		0	0	0	240	New smelter, to be completed after 2000 (Platt's Metals Week, 14 December 1998, p. 10)
	Xiezhou, Shanxi		33	33	33	63	Capacity to reach 101 ktpy eventually (Platt's Metals Week, 8 March 1999, p. 3)
Lanzhou Aluminium	Lanzhou, Gansu		86	86	86	86	New 100 ktpy smelter to be added eventually (Metal Bulletin, 22 July 1999, p. 3)
	Lianhai		30	30	30	60	
Reynolds/Shanxi provincial government	Changzhi, Shanxi		0	0	0	115	New smelter to be completed by the year 2000 (Metal Bulletin Monthly, September 1996, p. 29)
Provincial governments	50 small smelters		570	570	570	570	
Total China			**2073**	**2153**	**2289**	**2921**	
India							
Bharat Aluminium Co.	Korba, Madhya Pradesh	1975	100	100	100	100	
Hindustan Aluminium Co.	Renukoot, Uttar Pradesh	1962	210	210	242	242	Capacity expansion to be completed in 1998 (Metal Bulletin, 18 August 1997, p. 6)
Indian Aluminium Co. (Indal)	Alupuram, Kerala	1943	20	33	33	33	Expansion toook place in 1999 (Metal bulletin, 15 March 1999, p. 6)
	Belgaum, Karnataka	1969	70	70	0	0	To be closed down (Metal Bulletin, 15 March 1999, p. 6)
	Hirakud, Orissa	1959	30	30	30	60	Capacity expansion to be completed 2000-2001 (Metal Bulletin, 15 March 1999, p. 6)
Madras Aluminium Co.	Mettur, Tamil Nadu	1965	25	25	25	25	Re-opened after closure, own power plant to be built (Platt's Metals Week, 11 January, 1999, p. 14, 14January 1999, p. 5)
National Aluminium Co.	Angul, Orissa	1987	230	230	230	350	Expansion to be completed in 2003 (Metal Bulletin, 18 February 1999, p. 13); partly closed for repairs, production in 1999 to be 218 ktons (Metal Bulletin, 26 July 1999, p. 9)
Sterlite Industries Ltd.	Ib Valley, Orissa		0	0	0	125	Integrated project with 250 ktpy smelter, 125 ktpy in first phase, to be completed in late 2001 (Metal Bulletin, 28 September 1999, p. 9)
Total India			**685**	**698**	**660**	**935**	

Country/company	Location	Start-up	Capacity				Comments
			1998	1999	2000	2003	
Indonesia							
P.T. Indonesia Asahan	Kuala Tanjung	1983	225	225	225	225	
Iran (Islamic Republic of)							
Al Mahdi Aluminium Corp.	Bandar Abbas	1997	220	220	220	220	
Iralco	Arak	1972	120	120	120	120	
Prime International	Qeshm		28	28	28	28	
Total Iran (Islamic Republic of)			**368**	**368**	**368**	**368**	
Korea D.P.R.							
State	Chinampo		20	20	20	20	
	Pyongyang		20	20	20	20	
Total Korea D.P.R.			**40**	**40**	**40**	**40**	
Tajikistan							
TAZ	Regar	1975	520	520	520	520	
Turkey							
Etibank	Seydisehir	1974	60	60	60	60	
United Arab Emirates							
Dubai Aluminium	Jebel Ali	1979	390	536	536	536	The expansion was completed in October 1999 (Metal Bulletin, 4 October 1999, pp. 6)
Total Asia			**4921**	**5160**	**5258**	**6165**	
Europe							
Bosnia and Herzegovina							
Energoinvest	Mostar	1981	(91)	(91)	(91)	(91)	The smelter was closed down in 1992 and has been damaged by the hostilities; it is unlikely to be re-opened in the foreseeable future (Metal Bullletin, 25 January 1996, p. 6)

Country/company	Location	Start-up	Capacity				Comments
			1998	1999	2000	2003	
Croatia							
TLM	Sibenik	1973	(75)	(75)	(75)	(75)	The smelter has been severely damaged by hostilities and is unlikely to re-open in the foreseeable future (Metal Bulletin, 25 January 1996, p. 6).
Slovenia							
TGA	Kidricevo	1954	75	75	75	75	
Yugoslavia							
Kombinat Aluminijuma Titograd-Niksic	Podgorica	1972	110	110	110	110	Managed by Glencore (Platt's Metals Week, 28 December 1998, p. 12)
Total Europe			**185**	**185**	**185**	**185**	
Total developing countries			**8547**	**8830**	**8928**	**10127**	
Total world			**24437**	**24832**	**25387**	**27241**	

Sources: Trade journals